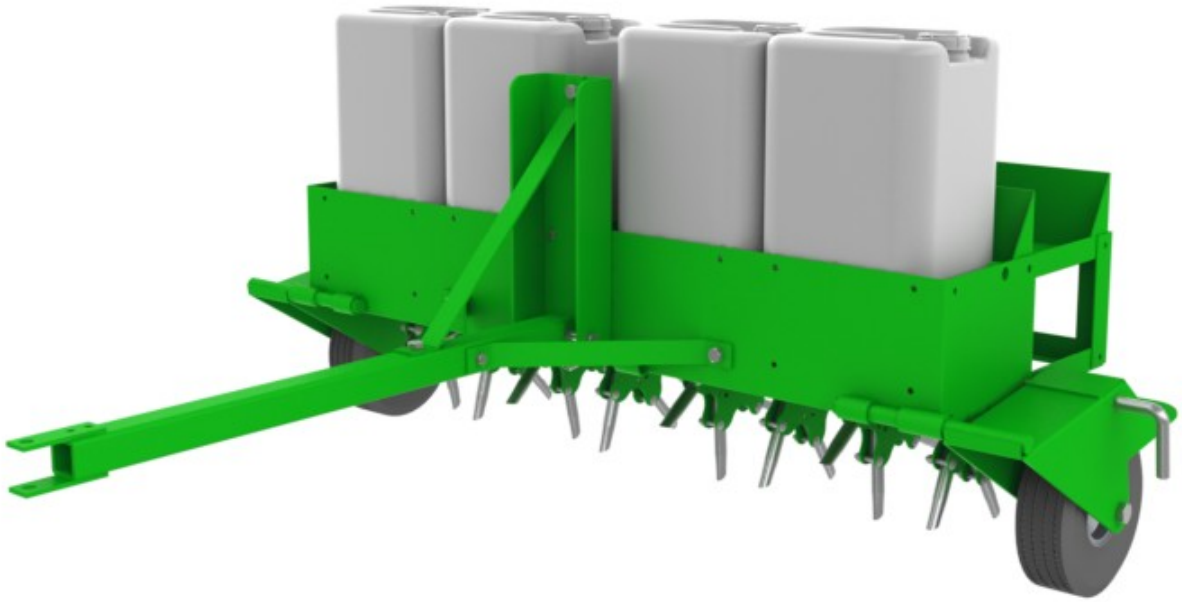
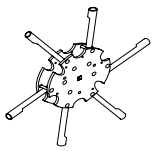
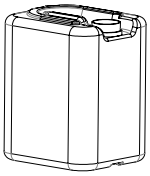
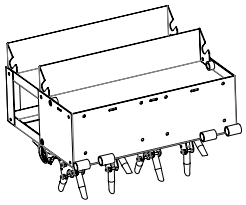


BILLY GOAT TOW AERATOR
AET48 Owner's Manual

Replacement Parts

Tine Row Kit	Tine Kit	Water Jug	72" Conversion Kit
Complete tine row set for replacement of one complete row of tines. Includes mounting plates, spacer, and all hardware. 	Individual coring tine for replacement of worn or broken tines.	Provides weigh for the machine to allow for deeper ground penetration. 	Allows the unit to be expanded to 72". 
P/N 360197	**P/N 360100**	**P/N 361100**	**P/N 361273**

ABOUT THIS MANUAL

THANK YOU for purchasing a BILLY GOAT ® Tow *Aerator*. Your new machine has been carefully designed and manufactured to provide years of reliable and productive service. This manual provides complete operating and maintenance instructions that will help to maintain your machine in top running order. Read this manual carefully before assembling, operating, or servicing your equipment.

CONTENTS

SERIAL PLATE DATA AND SPECIFICATIONS 3

GENERAL SAFETY 4-5

PACKING CHECKLIST & ASSEMBLY 6

ASSEMBLY AND OPERATION 7-8

MAINTENANCE 9

TROUBLESHOOTING AND WARRANTY PROCEDURE 10

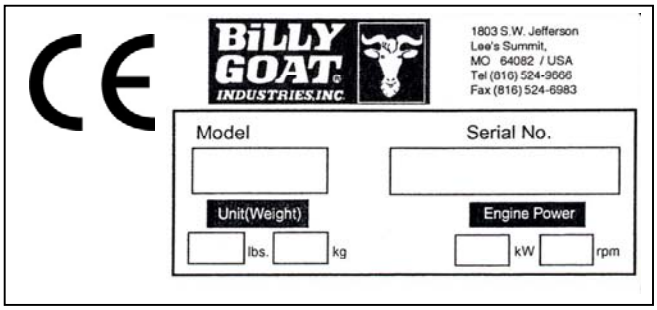
ILLUSTRATED PARTS & PARTS LISTS 11-12

SERIAL PLATE DATA

Record the model number, serial number, date of purchase, and where purchased.

Purchase Date: _____

Purchased From: _____



Specifications

	TOW AE
Total Unit Weight:	244# (109.8 Kg)

GENERAL SAFETY INSTRUCTIONS and SYMBOLS

The safety symbols shown below are used throughout this manual. You should become familiar with them before assembling, operating, or servicing this equipment.

This symbol indicates important information that will prevent injury to yourself or others.

This symbol indicates ear protection is recommended when operating this equipment.

This symbol indicates eye protection is recommended when operating this equipment.

This symbol indicates gloves should be worn when servicing this equipment.

This symbol indicates that this manual and the engine manufacturer's manual should be read carefully before assembling, operation, or servicing this equipment.

This symbol indicates important information that will prevent damage to your BILLY GOAT ® Tow Aerator.

Read and make sure you thoroughly understand the following safety precautions before assembling, operating or servicing this equipment:

READ this manual and the engine manufacturer's manual carefully before assembling, operating, or servicing this equipment.

EAR PROTECTION is recommended when operating this equipment.

EYE PROTECTION is recommended when operating this equipment.

BREATHING PROTECTION is recommended when operating this equipment.

WARNING:

DO NOT leave equipment unattended while in operation.

DO NOT park equipment on a steep grade or slope.

DO NOT operate equipment with bystanders in or near the work area.

DO NOT allow children to operate this equipment.

DO NOT operate equipment with guards removed.

DO NOT operate equipment on steep slopes

DO NOT operate barefoot or wearing open sandals. Always wear substantial footwear

DO NOT place hands or feet underneath unit, or near any moving parts.

DO NOT operate the machine while under the influence of alcohol or drugs.

DO NOT aerate near drop-offs, ditches, or embankments.

DO NOT aerate at high speeds or while making extremely sharp turns.

ALWAYS raise the tine reel when crossing gravel drives, walks, or roads.

ALWAYS Use equipment only in daylight or good artificial light.

ALWAYS wear safety goggles or safety glasses with side shields

WARNING: Important

Remove all rocks, wire, string, etc. that can present a hazard during work prior to starting.

DO identify and mark all fixed objects to be avoided during work such as sprinkler heads, water valves, limbs, or clothes line anchors, etc.

WARNING: Important

This unit is not meant to be transported on roadways. Doing so can damage the unit and possibly cause harm to the operator or bystanders.

INTENDED USE

INTENDED USE: This machine is designed for aerating established lawns and large grass covered areas. The machine should not be used for any other purpose than that stated above.
DO NOT operate if excessive vibration occurs. If excessive vibration occurs, stop immediately and check for damaged or worn tine reel, loose set screws, lodged foreign objects. (See trouble shooting section on page 10).

INSTRUCTION LABELS

The labels shown below were installed on your BILLY GOAT ® Aerator. If any labels are damaged or missing, replace them before operating this equipment. Part numbers from the Illustrated Parts List are provided for convenience in ordering replacement labels. The correct position for each label may be determined by referring to the part numbers shown.

LABEL WARNING GUARDS
P/N 900327

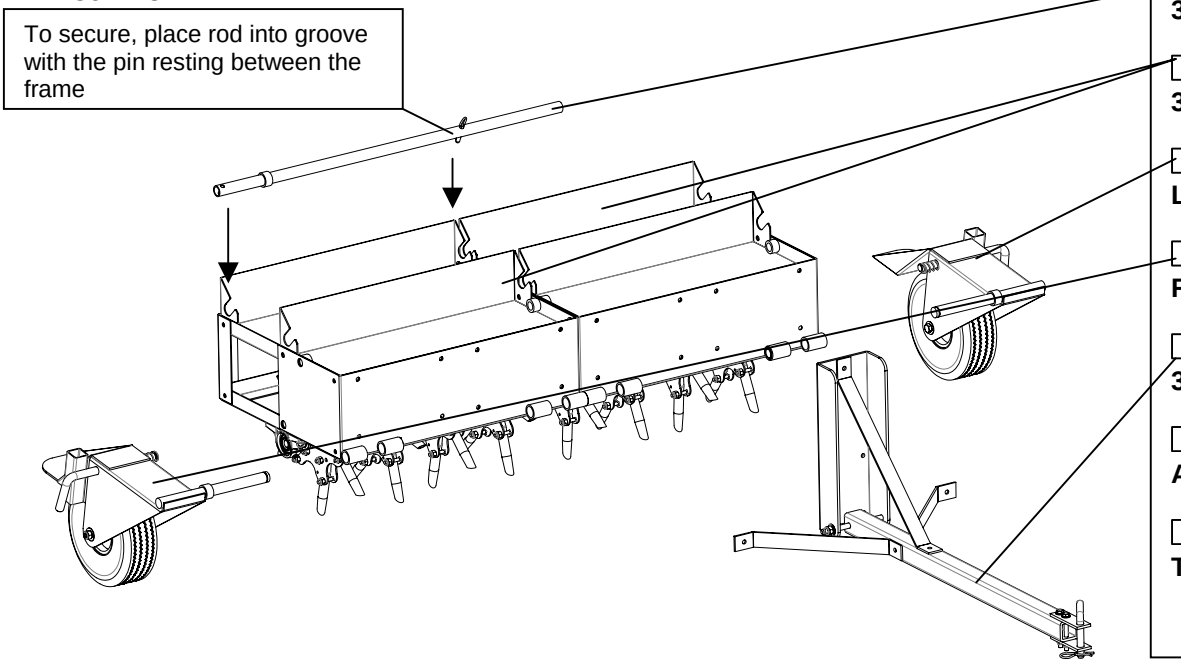
PACKING CHECKLIST

Your Billy Goat is shipped from the factory in one carton.

READ all safety instructions before assembling unit.
TAKE CAUTION when removing the unit from the box.

PARTS BAG & LITERATURE ASSY

Warranty card P/N- 400972, Owner's Manual P/N-361149, Loose Parts Bag P/N-361148



Boxing Parts Checklist

- ☐ **Lift Bar Tow AE - 361149**
- ☐ **Tow AE Frame - 361130-S**
- ☐ **Wheel Assembly Left - 361111-S**
- ☐ **Wheel Assembly Right - 361112-S**
- ☐ **Hitch Assembly-361114**
- ☐ **Loose Parts Assembly - 361148**
- ☐ **Owner's Manual Tow AE 361149**

ASSEMBLY

1. **Assemble** the machine. See page 11 for parts illustration.
2. First attach the two frames together (item 1) with the hardware (items 31,32, and 35).
3. Grease the shafts on the wheel assemblies. Then attach the wheel assemblies to the frame by sliding them in the collars on the front side of the frame. Then secure them in place with the snap rings (item 22).
4. Attach the hitch assembly and braces (items 9 and 10) to the frame with the hardware (items 31, 32, 33, 34, 35, and 36).
5. Attach the machine to a suitable hitch using the pin (item 15) and hitch pin (item 16).
6. **Place** water tanks or weights in the designated positions the unit and secure them with a strap. **DO NOT** overload this machine with weights.
7. Secure the lift rod before aerating.

OPERATION

⚠Like all mechanical tools, reasonable care must be used when operating machine.
Inspect machine work area and machine before operating. Make sure that all operators of this equipment are trained in general machine use and safety.

DO NOT operate if excessive vibration occurs. If excessive vibration occurs, stop immediately and check for damaged or worn tine reel, loose set screws, or lodged foreign objects. (See trouble shooting section on page 10).

TINES RAISING/LOWERING
Place your foot on the wheel guard or insert the lift rod into the square slot and apply pressure, then pull the pin outward. This will allow the wheel to move up or down. Repeat this operation on the opposite side. DO NOT operate with one wheel up and the other down, this can damage the unit.

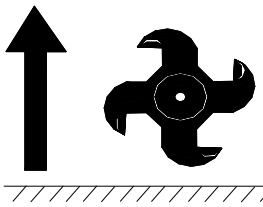
BEFORE AERATING

MOW: Mow the lawn to its normal cut height.

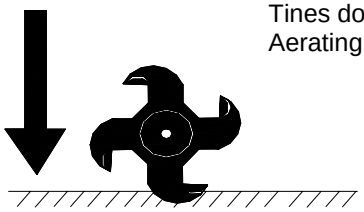
WATER: For the best performance and maximum tine penetration the lawn should be thoroughly watered the day before aeration.

INSPECT lawn before beginning work. Remove all rocks, wire, string, or other objects that can present a hazard during work prior to starting.

IDENTIFY and mark all fixed objects to be avoided during work, such as sprinkler heads, water valves, buried cables, or clothes line anchors, etc.



Tines up
transport



Tines down
Aerating

HANDLING & TRANSPORTING:

CAUTION: This unit is heavy do not lift.
REMOVE: Drain the water from the weight jugs (see accessories pg. 1) or remove weights before loading and unloading the unit.
NOTE: The water tank accessory is also heavy (up to 40 lbs.) when it is full of water. The tank should be drained and secured in place during transport.

USING RAMPS: Use ramps that are of adequate strength for a unit of this weight. When loading the aerator using ramps be sure the ramp is not too steep and that the surface of the ramp provides good traction.

PARKING
NEVER PARK THIS UNIT ON A SLOPE OF ANY KIND. Always keep tines in the up position when parking the unit.

ENGAGE TINES: With the aerator in the work area, raise both wheels to their upward locked position, this will lower the tines into the dirt.

TRANSPORT: Be sure to lift the tines out of the ground before transporting away from the work area.

AERATING TIPS

WATER: For the best performance and maximum tine penetration, the lawn should be thoroughly watered the day before aeration.

SLOPES: Do not aerate on steep slopes. Use extreme caution when operating on any sloped surface. For lesser sloped areas operate the unit, traversing up and down at a 45 degree angle to the slope rather than straight across.

TINE PENETRATION: Maximum tine penetration is achieved by the amount of weight that is being used.

TURNING: Avoid sharp turns or high speed turns as this may result in damage to the machine.

MAINTENANCE

PERIODIC MAINTENANCE

Periodic maintenance should be performed at the following intervals:

Maintenance Operation	Every Use (daily)	Every 25 hrs	Every 50 Hours
Inspect for loose, worn or damaged parts.		●	
Thoroughly clean all debris from unit and tine reel	●		
Check tine reel nut torque. Torque to min. 100 ft.lbs.			●
Grease bearings (see lubrication).			●

TINE REEL REMOVAL AND TINE ROW REPLACEMENT (see parts illustration on page 11)

TINE REEL REMOVAL

NOTE: Tine reel removal is only necessary to replace an entire tine row or for other major unit maintenance. Individual tines can be replaced by following the INDIVIDUAL TINE REPLACEMENT instructions.

1. With the tines in a raised position, secure the unit by chocking the wheels.
2. Remove the four bolts and nuts, two on each side, holding the tine reel bearings in place. BE CAREFUL the tine reel is heavy and sharp. Take precautions to not allow it to fall when the bearing bolts are removed.
3. Lift the reel up and to the side to remove it from the drive chain.
4. See TINE ROW REPLACEMENT for instructions on maintenance.
5. To reinstall the reel follow the above steps in reverse.

TINE ROW REPLACEMENT

1. Remove the tine reel per the TINE REEL REMOVAL instructions.
2. Remove the cotter pin and nut at the end of the tine reel shaft that secures the tine rows in place.
3. Remove the tine rows and spacers as necessary to replace the defective part. Be sure to note the order in which the spacers were removed for later reassembly.
4. Reassemble the tine reel in the exact order that it was disassembled.
5. Tighten the nut that secures the tine rows and spacers on the shaft. Torque the nut to a minimum of 100 ft.lbs. Check that all of the tine rows are tight by attempting to move them by hand.
6. Reinstall the tine reel per the TINE REEL REMOVAL instructions above.

TIP: Spraying tines with a rust preventing lubricant can increase tine life and allow for easier replacement of worn or damaged tines.

INDIVIDUAL TINES REPLACEMENT

1. With the tines in a raised position, secure the unit by chocking the wheels.
2. Loosen but do not remove the outermost nut and carriage bolt that secure the damaged or worn tine.
3. Loosen and remove the innermost nut and carriage bolt that hold the tine in the reel.
4. Use a small pry bar and push the tine plates apart slightly to slide out the tine to be replaced.
5. Slide the new tine in place and secure with the innermost nut and carriage bolt. Tighten completely.
6. Retighten the outermost nut and carriage bolt to completely secure the new tine.
7. Repeat as required to replace all damaged or worn tines.

NOTE: Tines are a normal wear item and should be inspected regularly for signs of wear or damage.

LUBRICATION

BEARINGS-

1. With the tines in a raised position, secure the unit by chocking the wheels.
2. Lubricate all the bearings using a pressurized grease gun with standard lithium based grease.
3. Wipe any excess grease off of all bearings and fittings after each lubrication.

NOTE: If machine is cleaned with a pressure washer, the bearings should be lubricated after each cleaning.

Troubleshooting

Problem	Possible Cause	Solution
Abnormal vibration.	Damaged or missing tines. Loose nuts and bolts	Stop work immediately. Replace any damaged or missing tines. Tighten all loose bolts and nuts.

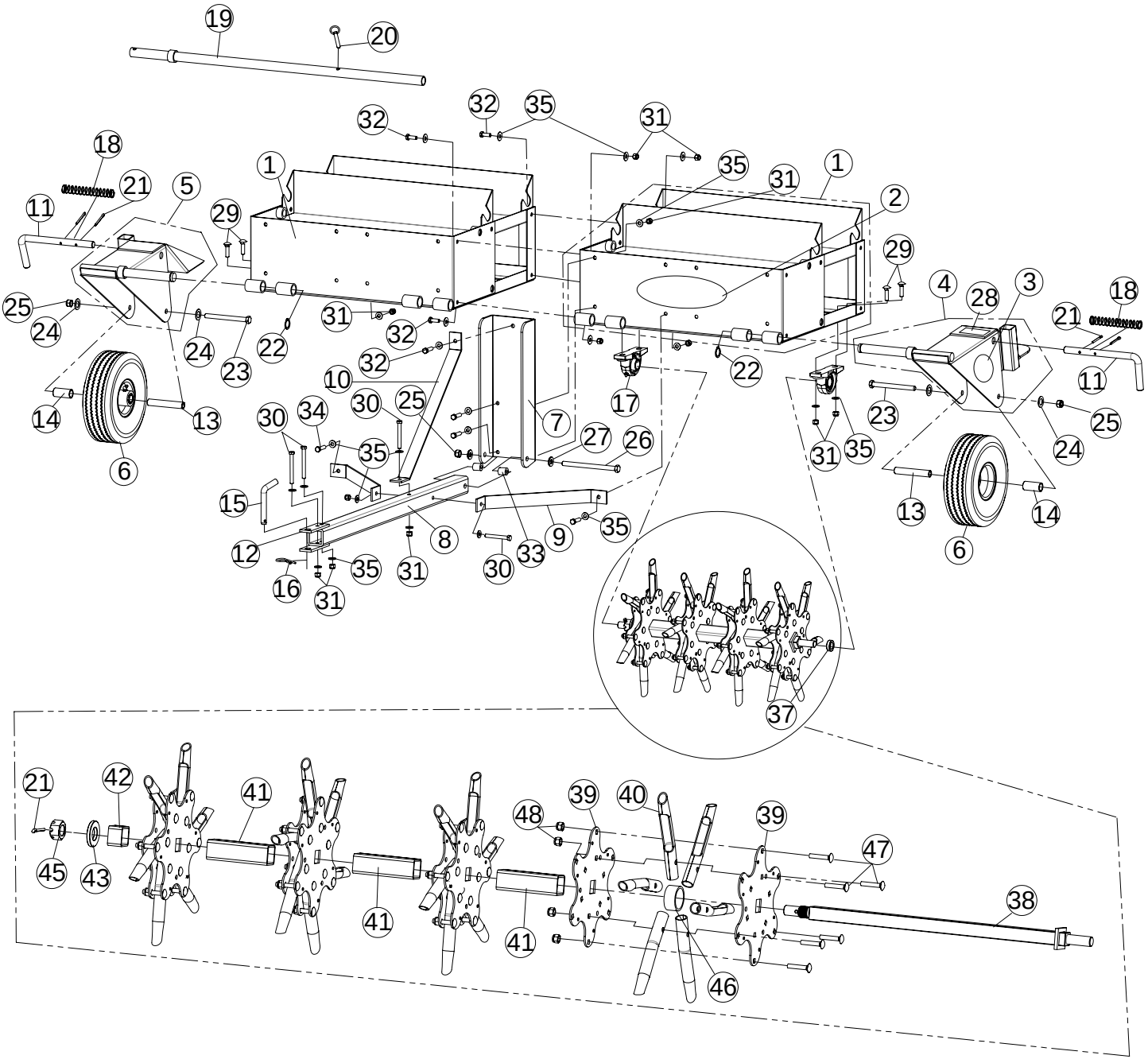
WARRANTY CLAIM PROCEDURE

Should a BILLY GOAT ® machine fail due to a defect in material and/or workmanship, the owner should make a warranty claim as follows:

- The machine must be taken to the dealer from whom it was purchased or to an authorized Servicing BILLY GOAT Dealer.
- The owner must present the remaining half of the Warranty Registration Card, or, if this is not available, the invoice or receipt.
- The Warranty Claim will be completed by the authorized BILLY GOAT Dealer and submitted to their respective BILLY GOAT Distributor for their territory Attention: Service Manager. Any parts replaced under warranty must be tagged and retained for 90 days. The model number and serial number of the unit must be stated in the Warranty Claim.
- The distributor service manager will sign off on the claim and submit it to BILLY GOAT for consideration.
- The Technical Service Department at BILLY GOAT will study the claim and may request parts to be returned for examination. BILLY GOAT will notify their conclusions to the distributor service manager from whom the claim was received.
- The decision by the Technical Service Department at BILLY GOAT to approve or reject a Warranty Claim is final and binding.

For online product registration go to www.billygoat.com

PARTS DRAWING AE



PARTS LIST AE

ITEM NO.	DESCRIPTION	TOW AE Part No.	QTY
1	FRAME TOW AE W/LABELS	361130-S	2
2	LABEL PRODUCT OVAL	360274	2
3	LABEL PRODUCT DECAL SM CIRCLE	890456	2
4	SERVICE WHEEL BRACKET LEFT	361111-S	1
5	SERVICE WHEEL BRACKET RIGHT	361112-S	1
6	SERVICE WHEEL ASSY TOW AE	361272-S	2
7	BRACKET MOUNT TONGUE	361136	1
8	TUBE TONGUE TOW AE	361137	1
9	BRACE TONGUE SHORT	361161	2
10	BRACE TONGUE LONG	361139	1
11	PIN WHEEL TOW AE	361144	2
12	PLATE HITCH TOW AE	361160	2
13	SPACER 3/4" ID X 2.125	361146	2
14	SPACER WHEEL TOW AE	361145	2
15	PIN BENT ARM 5/8" X 3"	811168	1
16	PIN HAIR SPRING 5/8" - 3/4"	811169	1
17	BEARING 3/4" CAST BLOCK	350133	4
18	SPRING WHEEL TOW AE	361169	2
19	LIFT BAR WA TOW AE	361152	1
20	PIN 3/8" X 1 1/2 DETENT	510130	1
21	PIN COTTER 3/16" X 2" ZP	8197033	4
22	RING SNAP EXTERNAL	361150	2
23	SCREWCAP 1/2" - 13 X 5 1/2" HCS ZP	8041109	2
24	WASHER .765 ID X 1.25 OD X .06"	850238	4
25	NUT LOCK 1/2" - 13 HEX	8160005	3
26	SCREWCAP 1/2-13 X 7" HCS	8041235	1
27	WASHER 1/2" SAE	8172011	2
28	LABEL WARNING	900327	2
29	BOLT CARRIAGE 3/8" - 16 X 1 1/2"HCS	8024060	8
30	SCREWCAP 3/8" - 16 X 3 1/2 HCS	8041060	2
31	NUT LOCK 3/8" - 16 HEX	8160003	23
32	SCREWCAP 3/8" - 16 X 1 1/4" HCS ZP	8041051	5
33	SPACER 1/2" ID X 1.5	361147	2
34	SCREWCAP 3/8" - 16 X 1 1/2" HCS ZP	8041052	6
35	WASHER 3/8" SAE	8172009	38
36			
37	SPACER TINE BEARING	360109	2
38	SHAFT TINE WA TOW AE	361102	2
39	PLATE MOUNT DRIVE TINE	360101	16
40	TINE 3/4" CORE HARDENED	360100	48
41	TUBE 1.5" SQ X 5.027" 12 GA	361265-P	6
42	TUBE 1.5" SQ X 1.125" 12 GA	361266	2
43	SPACER ENGINE HONDA	830113	2
44			
45	NUT SLOTTED HEX 7/8" - 14 GR. 2	8148005	2
46	SPACER TINE DRIVE	360105	8
47	BOLT CARRIAGE 5/16" - 18 X 1 3/4"	8024043	96
48	NUT LOCK 5/16" -18	8160002	96